

We claim:

1. A salt-like chemical compound of the formula (I),

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where

10 R^1 are identical or different and are each a hydrogen atom, a halogen atom, C_1-C_{20} -alkyl, C_6-C_{14} -aryl, C_1-C_{10} -alkoxy, C_2-C_{10} -alkenyl, C_7-C_{20} -arylketyl, C_7-C_{20} -alkylaryl, C_6-C_{10} -aryloxy, C_1-C_{10} -haloalkyl, C_6-C_{10} -haloaryl, C_2-C_{10} -alkynyl or C_3-C_{20} -alkylsilyl,

15 M is an element of main group III of the Periodic Table of the Elements, and

R^2 is a substituted or unsubstituted heterocycle.

2. A salt-like chemical compound of the formula I as claimed in
20 claim 1, wherein the heterocycle is pyrrolium, indolium or imidazolium.

3. A salt-like chemical compound of the formula I as claimed in
claim 1, wherein M is aluminum or boron.

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4. A salt-like chemical compound as claimed in claim 1, wherein
the heterocycle R^2 is unsubstituted or substituted by at
least one halogen atom, C_1-C_{20} -alkyl, C_1-C_{10} -alkoxy,
 C_2-C_{10} -alkenyl, C_7-C_{20} -arylketyl, C_7-C_{20} -alkylaryl,
30 C_6-C_{10} -aryloxy, C_1-C_{20} -haloalkyl, C_6-C_{14} -haloaryl,
 C_2-C_{10} -alkynyl or C_3-C_{20} -alkylsilyl.

5. A salt-like chemical compound as claimed in claim 1, wherein
the heterocycle R^2 is unsubstituted.

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6. A process for preparing compounds of the formula (I) as
claimed in claim 1, in which compounds of heterocycles R^2
containing elements of main group I or II of the Periodic
Table of the Elements are firstly reacted with compounds of
40 the formula $(C_6R^{15})_3M$ in a solvent to form compounds of the
formula $[(C_6R^{15})_3MR^2]^-$ which are subsequently protonated by
reaction with a proton donor, where R^1 , M and R^2 are as
defined in formula (I).

45 7. A catalyst system comprising at least one organometallic
compound (A) of a transition metal, at least one compound of
the formula (I) as claimed in claim 1, if desired an alkyl

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compound (B) of an element of group III or IV of the Periodic Table of the Elements and, if desired, at least one support component (C).

5 8. A process for the polymerization of olefins, wherein the polymerization is carried out in the presence of a catalyst system as claimed in claim 6.

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